Developing virtual clinics for managing TIA and minor stroke during the COVID-19 pandemic

Appendix 12: Case study examples

Case study 1: Wirral University Teaching Hospital NHS Foundation Trust

Dr Deb Lowe, *Consultant Stroke Physician and Geriatrician, Wirral University Teaching Hospital NHS Foundation Trust; National Clinical Director for Stroke Medicine, NHSE&I*

Wirral University Teaching Hospital has been delivering tele-triage for all TIA/minor stroke referral for almost 10 years. Referrals are received via e-mail on a standard proforma from GPs and the ED. The initial telephone assessment is completed by an experienced stroke nurse specialist, with same-day discussion with the 'hot-week' stroke consultant, a subsequent next day 'one-stop' TIA clinic. Since the COVID-19 pandemic, tele-triage has continued, but face-to-face clinics have been replaced by telephone consultations, or on occasion by video calls, initially using WhatsApp or FaceTime. Consultations are supported by a thorough stroke specialist nurse history to ensure efficient use of consultant time, using a structured approach with a checklist. The consultation generates a clinic letter in the same way a face-to-face consultation would. The electronic health record is also used to record all virtual telephone conversations.

During the call, the clinician takes history following the usual clinic format. Patients are asked to do a pulse check to determine whether it feels irregular, if the clinician feels the patient is able to do this. As about half of patients, mostly elderly, are unable to identify their own pulse, remote solutions for obtaining BP and pulse are being investigated.

Four main groups of patients are identified at this stage:

- Definite TIA or minor stroke from initial history
- Not TIA from initial history but needs rapid assessment and management via TIA clinic, e.g. suspected space-occupying lesion
- Likely other diagnoses best assessed by another clinic; these patients are referred on to another clinic, although this option may become less available in the current crisis and investigations may be undertaken
- Not TIA/other diagnosis that does not need consultation; no appointment is required, so reassurance is given.

For patients with definite TIA/minor stroke, investigations are arranged, including blood tests, rhythm strip/ECG and brain imaging, MRI being the first line of investigation for TIA. To minimise waiting times at hospital for brain imaging, tests should be booked in ahead

Clinical AF is treated immediately, with at least a rhythm strip required before blood-thinning drugs are prescribed. DOACs should be prescribed rather than warfarin unless absolutely contraindicated (e.g. end-stage renal failure or creatinine clearance [CrCl] <20 ml/min). With respect to COVID-19, new guidance on prescribing of DOACs is followed and existing use of NSAIDs is reviewed.

Patients are followed up at 1 month with a further telephone consultation to ensure they have had all the necessary investigations, they are taking the necessary secondary prevention, and they understand their risk factors and diagnosis. All patients, if they consent, are referred for follow up to the Stroke Association commissioned service for community support Those with minor stroke (e.g. speech problems or ongoing limb weakness but still functionally able to manage at home) are referred to the stroke specific ESDT from clinic, to be seen within 48 hours.

Case study 2: East Kent Hospitals University Foundation Trust

Dr David Hargroves, *Consultant Physician and Clinical Lead for Stroke Medicine at EKHUFT*

Dr Hargroves has been running virtual clinics from the start of the COVID-19 crisis, triaging about 60 people within the first month. This has allowed patients to be filtered out at each stage of the process, with referrals requiring a face-to-face consultation reduced by 30–40%.

All virtual triage is currently led by a consultant, with calls made from a quiet location that will not be disturbed. Virtual consultations are most successful when they follow the usual template for normal outpatient clinic; they do tend to take longer than a normal consultation, but this improves with time as the consultant becomes more familiar with the new format.

Both patient and clinician prepare before the call. The patient is prewarned about the timing of the call and asked to be sat down and ready for a 20-minute consultation, with a list of medicines and information about relevant previous medical history to hand. The consultant reviews existing records, including blood tests and brain scans, to get a picture of the patient before the call and identify what information needs to be obtained during the call.

A history is taken as usual, including the reason for referral and the drug history, which provides useful information about their current medical history to set the context for the call. Patients are asked about any concerns and what they think is happening so that immediate concerns can be discussed and reassurance given. The consultant concludes the call by sharing their impression about the patient's condition, giving the differential diagnosis, explaining the treatment plan and investigation timeline, and discussing any issues arising from the diagnosis, including driving, flying and tablets.

Until community settings for testing and remote solutions for monitoring are in place, patients who require investigations, including BP, ECG (rhythm strip) and brain imaging, are asked to attend the hospital. Only about 30% of patients identified as having definite TIA through this virtual triage approach will require further investigation in the COVID-19 environment compared with about 70% who would have been investigated further in routine practice. Practical considerations to minimise risks are taken, including patients being asked to sit in scanners to minimise contact with the equipment. Patients are reassured that they will be seen as quickly as possible. Imaging for every patient with TIA/stroke is routinely reviewed by a multidisciplinary team to check against history, and this is continuing for virtual triage.

DOACs are prescribed unless contraindicated, with dosing based on patient-reported weight when a formal measurement is not available. Scripts are emailed to the nearest pharmacy.

A clinic letter is sent as usual and copied to the patient. This highlights that a full in-person examination was not possible. Patients are asked to contact the clinic secretary or GP referrer if symptoms have not improved in 1 month.

Case study 3: Oxford University Hospital referral system

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The TIA and minor stroke referral pathway at Oxford University Hospitals NHSFT was reconfigured in 2019 when the TIA service switched to one delivered by the duty stroke consultant every day rather than via discrete outpatient clinics. The system has been further reconfigured to meet the challenges of the COVID-19 pandemic to minimise the amount of direct patient contact with the healthcare system.

To optimise the standard of triage, the TIA service referrals are reviewed directly by the duty stroke consultant throughout each day (at least twice per day) to ensure a prompt triage and clinic review service. The review process is supported in real-time by a dedicated TIA and stroke secretary. No referrals are made by telephone, unless the patient is already in the hospital and there is an opportunity to avoid a future visit to hospital from direct review by a member of the stroke team.

- Referrals from both the ED and GPs are completed using a referral proforma PDF sent to a dedicated nhs.net email address. Access to this TIA inbox is available to all of the stroke consultants and the TIA secretary.
- The referral proforma contains a structured template, check boxes to prompt appropriate referral, and information about alternative referral pathways for non-specialists. It also contains prompts to administer aspirin and give driving advice.
- The TIA inbox is reviewed by the duty stroke consultant at regular intervals throughout the working day to triage referrals for review or arrange alternative clinic arrangements. This permits opportunistic triaging around unpredictable acute care commitments.
- The TIA secretary also screens the TIA inbox to create virtual hospital encounters for each referral at the earliest opportunity. This ensures that a telephone review can be documented in the electronic health record at the time of triage and investigations requested against the correct patient encounter.
- Once an outcome for the referral is decided, the original referral email is forwarded to the same TIA inbox with 'Triaged:' prefixed in the email subject line and with instructions for the TIA secretary in the email body.
- A redirect rule has been created so the 'Triaged:' prefix ensures this forwarded email is automatically sent straight to a subfolder for actions and archive by the TIA secretary.
- The duty consultant can then delete the original referral email from the TIA inbox once all consultant actions are taken, ensuring it is clear to the next duty consultant which referrals have been reviewed and actioned.